

What is claimed is:

1. A scheduling apparatus performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

a determining device determining whether or not to move a first job currently being executed by a processor element to a different processor element; and

10 an assigning device assigning a second job currently being executed to the plurality of processor elements so that a migration process of the first job is performed, if it is determined that the first job is to be moved to the different processor element.

15 2. The scheduling apparatus according to claim 1, further comprising

a monitoring device monitoring a load state of the plurality of processor elements, wherein
if a load distribution imbalance occurs between
20 the plurality of processor elements, said assigning device assigns the second job to the plurality of processor elements.

25 3. The scheduling apparatus according to claim 1, wherein:

5 said determining device generates a job information table including information of the second job, determines a job to be moved among jobs within the job information table, and generates a relocation list including information of a job relocated on the plurality of processor elements; and

10 said assigning device assigns the second job to the plurality of processor elements based on the relocation list.

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4. The scheduling apparatus according to claim 1, wherein

15 said determining device calculates a cost required for the migration process of the first job, and determines whether or not to move the first job to the different processor based on a calculated cost.

20 5. The scheduling apparatus according to claim 1, wherein

25 said determining device estimates an execution cost of the first job based on execution history information of the first job, and determines whether or not to let the first job migrate to the different processor by using an estimated execution cost.

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6. A scheduling apparatus performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

a static scheduling device performing scheduling
5 of a job in a static state; and
a dynamic scheduling device performing job
scheduling of a job in a running state.

7. A scheduling apparatus performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

a static scheduling device performing scheduling
in a case where a configuration of the parallel computer
system is fixed; and
15 a dynamic scheduling device performing scheduling
in a case where the configuration of the parallel computer
system is changeable.

8. A parallel computer system having a plurality of processor elements, comprising:

a determining device determining whether or not
to move a first job currently being executed by a processor
element to a different processor element; and
25 a scheduling device performing scheduling of a
second job currently being executed so that a migration

process of the first job is performed, if it is determined that the first job is to be moved to the different processor.

5 9. A computer-readable storage medium on which
is recorded a program for causing a computer which performs
job scheduling of a parallel computer system having a
plurality of processor elements to execute:

10 determining whether or not to move a first job
currently being executed by a processor element to a
different processor; and

15 assigning a second job currently being executed
to the plurality of processor elements so that a migration
process of the first job is performed, if it is determined
that the first job is to be moved to the different
processor.

20 10. A computer-readable storage medium on which
is recorded a program for causing a computer which
performs job scheduling of a parallel computer system
having a plurality of processor elements to execute
a scheduling process into which static scheduling
and dynamic scheduling are combined.

25 11. A scheduling apparatus performing job

scheduling of a parallel computer system having a plurality of processor elements, comprising:

5 determining means for determining whether or not to move a first job currently being executed by a processor element to a different processor element; and

10 assigning means for assigning a second job currently being executed to the plurality of processor elements so that a migration process of the first job is performed, if it is determined that the first job 10 is to be moved to the different processor element.

12. A scheduling apparatus performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

15 static scheduling means for performing scheduling of a job in a static state; and

dynamic scheduling means for performing scheduling of a job in a running state.

20 13. A scheduling apparatus performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

25 static scheduling means for performing scheduling in a case where a configuration of the parallel computer system is fixed; and

dynamic scheduling means for performing scheduling in a case where the configuration of the parallel computer system is changeable.

5 14. A propagation signal for propagating a computer program to a computer, the program causing the computer to perform:

10 determining whether or not to move a first job currently being executed by a processor element to a different processor; and

15 assigning a second job currently being executed to the plurality of processor elements so that a migration process of the first job is performed, if it is determined that the first job is to be moved to the different processor element.

16 15. A propagation signal for propagating a computer program to a computer, the program causing the computer to perform

20 executing a scheduling process into which static scheduling and dynamic scheduling are combined.

25 16. A scheduling method performing job scheduling of a parallel computer system having a plurality of processor elements, comprising:

determining whether or not to move a first job currently being executed by a processor element to a different processor element; and

assigning a second job currently being executed
5 to the plurality of processor elements so that a migration process of the first job is performed, if it is determined that the first job is to be moved to the different processor element.